

REMARKS/ARGUMENTS

Reexamination and reconsideration of this Application, withdrawal of the rejections, and formal notification of the allowability of all claims as now presented are earnestly solicited in light of the above amendments and remarks that follow.

Claims 25-40 are pending in the application. Claims 1-24 have been cancelled without prejudice or disclaimer. New claims 25-40 are presented and represent the same general subject matter as set forth in the original claims. Additional dependent claims directed to specific compositions disclosed in the specification have been added. Applicants respectfully submit that the content of these added claims is fully supported by the specification as filed.

Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over the publication "Weeds" (1991) by Harr et al. in view of U.S. Patent No. 5,336,662 to Lee and U.S. Patent No. 4,824,475 to Markley et al. Applicants respectfully traverse this rejection.

The Examiner argues that the declaration filed under 37 CFR 1.132 to demonstrate surprising results is not sufficient to overcome the rejection of claims 1-24. Applicants respectfully disagree. Initially, the Examiner indicates that the showing is not commensurate in scope with the claims, as no diketones or triazines have been shown to have synergistic activity. In order to expedite prosecution, diketones have been removed from the claims. Furthermore, in order to expedite prosecution, the combination of triazines with dimethenamid alone has been removed from the claims. Dependent claims comprising the combination of triketones with dimethenamid further comprising a triazine have been introduced. Additionally, in order to expedite prosecution, the claims have been amended to recite specific weight ratios or application rates, where appropriate. Applicants note that in the examples, specifically Example 4 in the specification and the examples in the Declaration of Dr. Sievernich, the weight ratios of the herbicides fall within the claimed ratios, and most of the application rates of the herbicides fall within the claimed values as well.

With regard to this claimed combination of dimethenamid with a triketone herbicide, the Examiner alleges that although the data in the declaration reflects that the combination of dimethenamid and mesotrione might be synergistic against CASTO, it is merely a difference in

degree and not in kind against CHEAL. Thus, the Examiner argues that the combination is not synergistic against all plants and the result is merely an “expected” result. Applicants respectfully disagree.

Any activity that is above the expected additive effect demonstrates synergy. The declaration shows that the tested combination of dimethenamid and triketone herbicide has a very broad spectrum of activity, showing a clearly synergistically increased action against all species of tested weeds. Specifically, the declaration provides results for no less than 16 species of weeds, and in every case where one or both of the dimethenamid and the triketone had activity against the weed, the activity of the combination exceeded the expected activity, demonstrating a clear synergistic effect. With regard to the CHEAL data, if the calculated (expected) efficacy against a specific weed is 99%, even the strongest synergy cannot result in an efficacy greater than 100%; consequently, the efficacy cannot be increased greater than 1%. Even the increase of the very good herbicidal action against CHEAL to a perfect 100% herbicidal action is a clear increase in action, and would not be regarded by one of skill in the art as an “expected” result.

The Examiner’s reliance on “expected” results is unfounded. The expected result is an educated guess based upon an assumed combinatorial effect. The expected effect for this combination of herbicides was exceeded in every case. Despite an increase from only “almost perfect” to “perfect,” the CHEAL data clearly indicates surprising results. Synergism is illustrated by across-the-board results that are better than expected, and is not refuted by focusing on one species where 100% effectiveness was achieved when an already high effectiveness was expected. Applicants also note the large increase in activity in some weed species, namely CASTO, for which in one example, the herbicidal combination provided 70% activity as compared with the 36% expected activity and PHBPU, for which in one example, the herbicidal combination provided 70% activity as compared with the 36% expected activity. Further, the Examiner has provided no concrete basis that achieving 100% effectiveness illustrates a lack of synergism. Although the increase in activity between the expected and experimental activities varies among different weeds, the herbicidal combination demonstrated synergy against all species of tested weeds. Accordingly, Applicants respectfully request reconsideration and

withdrawal of rejection of this subject matter based on the demonstration of synergy between dimethenamid and the triketone herbicide.

With regard to the claimed combination of dimethenamid with a diketone herbicide, the Examiner argues that the showing in the specification and declaration is not sufficient to overcome the rejection of claims 1-24 as unpatentable over Harr et al. in view of Lee and Markley et al. Although Applicants respectfully disagree with the rejection of this subject matter of these claims, in order to expedite prosecution, the claims have been amended to remove diketones and instead focus on triketones and optionally, triazines in combination with dimethenamid.

With regard to the combination of dimethenamid with a triazine herbicide, the Examiner alleges that no triazine has been shown to have synergistic activity. Applicants respectfully disagree. However, in order to expedite prosecution, the claims involving herbicidal mixtures comprising triazine herbicides have been amended to provide that the mixtures comprising triazine herbicides also comprise dimethenamid and a triketone. The combination of dimethenamid, triketone, and a triazine is specifically taught in Example 4 of the specification to exhibit a synergistic herbicidal effect. Example 4 describes a herbicidal combination including dimethenamid, a triketone (sulcotrione), and a triazine (atrazine). As noted in the discussion following the example, this combination of compounds exhibited a synergistic herbicidal effect. Example 4 clearly indicates that every 3-component herbicidal mixture comprising dimethenamid, sulcotrione, and triazine resulted in a synergistic effect (ranging from +11% to +44% in relation to the expected additive effect). The discussion notes that “the synergistic effect is clearly visible at the lower rates of sulcotrione, resulting in a nearly doubled degree of control, compared to the expected additive efficacies. For the higher rates of sulcotrione, (>300 g/ha) only the additive effect remains visible since the total control is 100%.” The Examiner has noted in the Advisory Action dated June 29, 2009 that “even Applicant discloses the additive effect of adding higher amounts of the triketone sulcotrione.” However, the data presented in Example 4 does not indicate that there is only an additive effect. It is impossible to conclude that there is only an additive effect because the expected result based on an additive effect is 100%, as it is impossible to show an activity above 100%. This comment in Example 4 merely explains

the finding of 100% activity even with increasing amounts of sulcotrione and does not indicate that there is no synergistic effect. Accordingly, Applicants respectfully request reconsideration and withdrawal of rejection of this subject matter based on the demonstration of synergy between dimethenamid and the triazine herbicide.

Furthermore, although each of the references cited by the Examiner generally discusses combinations of herbicides, Applicants respectfully submit that the specific combination of dimethenamid with a second herbicide selected from the group consisting of triketone and triazine herbicides claimed in the present invention is not *prima facie* obvious. There is no suggestion or motivation in any of the cited references to combine the teachings of these references. Furthermore, one of skill in the art would not be motivated to utilize this particular combination of herbicides without the teachings of the present application. As a result, Applicants respectfully request reconsideration and withdrawal of this rejection.

In summary, even if a *prima facie* obviousness rejection has been made (which Applicant does not admit), the evidence of record overcomes this rejection. Based on the data contained in the specification and the data presented in the declaration of Mr. Sievernich, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 1-24.

Finally, the Examiner has noted that claim 15 is indefinite, as it comprises a list of compounds wherein one listed compound is not a triketone. Corresponding claim 29 has been amended to insert "dione" after 2-(4-methylsulfonyloxy-2-nitrobenzoyl)-4,4,6,6-tetramethyl-1,3-cyclohexane to reflect the listing of specific triketones in the specification. Thus, Applicants respectfully submit that this claim is not indefinite, as the specific list of herbicides in this claim comprises only triketones, as indicated.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefor (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

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Respectfully submitted,

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